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OLDEST BEE PAPER
IN AMERICA

THE WEEKLY BEE JOURNAL

ESTABLISHED
IN 1861

DEVOTED TO THE INTERESTS OF HONEY PRODUCERS.

ESTABLISHED IN
1861.

Chicago, Ill., October 29, 1884.

VOL. XX.—No. 44.

THE AMERICAN
BEE JOURNAL

PUBLISHED BY

THOMAS C. NEWMAN,

EDITOR AND PROPRIETOR.

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TO CORRESPONDENTS.

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Topics Presented in this Number.

A Poor Season.....	700
A Wonderful Yield of Honey....	700
Bee Journal for 1885.....	702
Bees and Flower Petals.....	695
Bees in Fall and Winter.....	699
Cash Premiums for Clubs.....	702
Convention Notices.....	700
Correspondence.....	693
Create a Local Honey Market....	701
Croton.....	700
Does Honey Agree with all?.....	699
Editorial Items.....	691, 692
Feeding Bees for Winter Stores..	691
Filling and Capping of Honey-Cells	696
Good Yield and Large Increase..	700
Honey and Beeswax Market.....	700
Honey at the Indiana State Fair.	692
Honey Exhibit at Lennox, Ont....	691
Is It Foul Brood?.....	701
Local Convention Directory.....	701
Moving Bees.....	701
My Report for 1884.....	696
My Report for the Season.....	700
Phenol and Foul Brood.....	692
Report from Sweet Home Apiary.	700
Seasonable Hints.....	692
Selections from Our Letter Box..	700
Selling Glass as Honey.....	701
Selling Honey at Home, etc.....	691
Sexual Functions of Bees.....	694
The Honey Harvest in Scotland..	700
The Results of the Present Year.	699
The Use of Phenol on Foul Brood	698
Tiering-up Sections—Hibernation.	694
Trial Subscribers.....	701
Utah Bee-Keepers' Convention...	693
Ventilating Bee-Hives.....	693
Wabash Co., Ind., Convention....	695
Western Bee-Keepers' Convention	696
What and How.....	701

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THOMAS G. NEWMAN,
925 West Madison Street., Chicago, Ill.

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Advertisements for the next Weekly BEE JOURNAL must reach this office by the Saturday of the previous week.

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Weekly Bee Journal,

DEVOTED TO THE INTERESTS OF THE PRODUCERS OF HONEY.

VOL. XX.

CHICAGO, ILL., OCTOBER 29, 1884.

No. 44.

**THE AMERICAN
BEE JOURNAL**

Published every Wednesday, by

THOMAS G. NEWMAN,

EDITOR AND PROPRIETOR.

At the late Northwestern Bee-Keepers' Convention in this city, it was voted that a committee should be appointed to endeavor to secure by legislation accurate crop reports of bees and honey in the different States of the Northwest; and also to present to the several legislatures the draft of a law concerning the bee-disease called "Foul Brood." The following were duly appointed as such committee:

Thos. G. Newman, Chicago, Ill.
T. L. Von Dorn, Omaha, Neb.
Prof. A. J. Cook, Agricultural Coll., Mich.
Chas. H. Green, Berlin, Wis.
O. Clute, Iowa City, Iowa.
A. Fahnestock, La Porte, Ind.
C. F. Greening, Grand Meadow, Minn.
Dr. G. L. Tinker, New Philadelphia, O.
D. G. Parker, St. Joseph, Mo.
Jas. A. Nelson, Wyandotte, Kans.

Of course the committee will commence its labors at once, and whenever there is anything to report it will be given to the bee-keeping public. The work laid out is important, and it will require much persistent labor to accomplish even a small part of it. Had we been present when the names of the committee were announced, we should have declined the honor, on account of indisposition, and the present multitudinous duties.

Honey Exhibit at Lennox, Ont.

The Napanee Beaver thus notices Mr. Allen Pringle's exhibit of bees, honey, wax, and apiarian implements at the Lennox, Ont., exhibition:

Mr. Allen Pringle made an exhibit of articles required by the apiarist, among which was the double-walled hive for wintering bees. It is arranged so as to secure perfect ventilation, and at the same time being filled in with sawdust, keeps the bees warm. He also showed an improved honey extractor and a summer hive. In the

palace Mr. Pringle exhibited a pyramid of honey in comb and extracted. His comb honey was taken from both the brood-chamber and the top of the hive. A more complete or finer display of honey has never been made in this county.

Mr. Joseph M. Wismer, of Jordan Station, Ont., has sent us a copy of the *Canadian Horticulturist*, containing a lithograph likeness of Mr. Wm. Saunders, President of the "Canadian Fruit-Growers' Association," a gentleman of broad views and indomitable energy. Having the confidence of the fruit growers of Canada, he is enabled to accomplish much for the pursuit. That is the secret of success. Jealous opposition to a standard-bearer always retards progress, and damages the interests of all. The *Horticulturist* says:

In 1880 the Government of Ontario appointed a special commission to inquire into the progress and condition of agriculture in the Province. Mr. Saunders was appointed one of the commissioners, and was charged with the special duty of inquiring into the subjects of fruit growing and forestry, insects and insectivorous birds, and bee-keeping. The results, mainly of his work, are embodied in a volume of over 350 pages, which was published by the Ontario Government as one of the series of reports presented by the commission.

Feeding Bees for Winter Stores.

The *Bee-Keepers' Guide* gives its method as follows:

It is the opinion of many experienced bee-keepers that there will be heavy losses sustained this winter, and the predictions, no doubt, will be realized; yet there is no necessity of such a calamity. If each colony is weighed and fed sugar syrup until it reaches the standard weight, there will be no need of anxiety. If the strength of the colony is impaired, extra protection may be necessary. Some apprehend difficulty from unhealthy stores gathered from the maples, and commonly known as honey-dew—a secretion of the maple bark-louse which has been so numerous this year. Consideration of how to overcome this difficulty has resulted

in an attempt to contrive means of removing honey of this character from the combs. We think it would be a very difficult task even if we were able to distinguish the good from the unwholesome stores. The most desirable colonies to winter are those which lack about 10 pounds of enough for winter stores, then by supplying the deficiency with sugar syrup, fed as late as October, the bees will store it within and around the cluster. We would certainly adopt this plan if our hives contained what we should consider unhealthy stores. With this management the bees will consume the healthful stores during the severe weather, or during the time of their confinement, thus leaving their own stores for brood-rearing purposes in early spring.

Selling Honey at Home, etc.

In the *Texas Farm and Ranch* we find the following items of interest to bee-keepers:

I do not believe it pays to ship honey in the barrel to commission merchants, and if a man tries he can sell his honey at home when put up in little cans and labeled. Besides, the label is an advertisement, and if the honey is good, it is an advertisement that is noted.

In selling honey, reputation for a good article establishes your trade. A good name is your fortune. Never try to be smart and get ahead of your customer. This is being dime wise and dollar foolish. If you please a customer, you make one; if you "beat" him you lose one.

The best honey weather is when it is warm and moist, when the air is full of electricity and a storm approaching.

Now it is being proposed that instead of the National Convention of Bee-Keepers being held at the New Orleans Exposition, that an international convention and exhibition be held there. We think the latter proposition the better one, although it is to be feared it is a little late in the day to begin. However, if it is taken hold of at once, promptly and with a will, it may be done yet. Anyway, "better late than never"—although we prefer "better never late."

To give away a copy of "Honey as Food and Medicine" to every one who buys a package of honey, will sell almost any quantity of it.

Phenol and Foul Brood.

On page 698 Mr. Kohnke has made some criticisms on the use of phenol for curing foul brood, as suggested in a late number of the BEE JOURNAL. Criticisms are always in order on every subject, if conducted in a friendly spirit. On the discovery of the method, which Mr. K. notices, the *British Bee Journal* remarks as follows:

Mr. Cheshire, in his paper read before the bee-keepers at the International Exhibition, gracefully expresses his indebtedness to Mr. Robert Sproule for suggesting to him the use of phenol as a probably successful means for the cure of foul brood. Mr. Sproule, in a communication which appears on page 284 of the present issue, says "that whatever credit there is for the suggestion of carbolic acid as a cure for the disease is due to Prof. Tichborne, of the Apothecaries' Hall, Dublin, with whom he had a conversation in October, 1881, on the subject." As the order of the day appears to be, "*Suum cuique tribuito*," we may be permitted to trace the suggestion of carbolic or phenic acid back to the year 1876. In that year there appeared in the columns of the *Bee Journal* (vol. iv. page 113) a letter from Captain Danyell, author of *The Italian* [Giotto's] *System of Bee-Keeping*, in which he details with considerable minuteness the mode adopted by Signor Brassi and Dr. Dubini, two advanced Italian bee-masters, for the cure of foul brood; and mentions among other curative means the use of "phenic or carbolic acid." This letter is referred to by the then editor of the *Bee Journal*, in a subsequent number, as a letter which may be read "with much advantage."

In a communication recently received from Mr. Cowan, he says, "With regard to Mr. Cheshire's treatment of foul brood, I think he has overlooked the fact that it has already been recommended by Vogel and Gravenhorst; and in 1877 Dr. Cech published a book called *Phenol, Thymol und Salicylsäure, als Heilmittel der Brutpest der Bienen*. For various reasons it has not been popular; but you will find in last number of the *Alsace-Lorraine Bee Journal* an article on the cure of foul brood with phenol according to Gravenhorst's method, by F. Vierling, who also calls it 'Bacillus' of foul brood."

Mr. John M. Hooker, another English apiarist, comments upon the above item as follows:

If, indeed, Mr. Cheshire did not in the first place suggest phenol either as a preventive or cure for foul brood, there can be no doubt that he first fully saw the enormous value which this substance, when properly used, would prove to bee-keepers. Had, indeed, the other gentlemen been fully aware of its value, do you not think we should have heard more about it?

Signor Grassi, I see from Captain Danyell's letter, does mention *acido*

phenico: but the considerable *minuteness* of detail in his description to which you refer, is *wholly* devoted to the use of salicylic acid. Moreover, phenol is suggested here only for washing purposes; and then as second to salicylic acid, which the writer says it may replace on account of its being cheaper.

Phenol has, however, been shown by Mr. Cheshire to be immensely superior to salicylic acid; and here we have experimental corroboration of an inference to be made by any one well acquainted with the general properties of phenol and salicylic acid.

The thanks of all bee-keepers are due to Mr. Cheshire, not only for his very able, interesting, exhaustive, and original researches upon the true nature of the disease, but also for the cure he has placed in their hands; and here I refer more especially to those formulæ which he has published. In less scientific, careful, and experienced hands than those of Mr. Cheshire, phenol would have been immediately discarded, owing to the difficulties and want of success which must necessarily attend first experiments in a case of this kind; but with a knowledge of the benefits derived from its use in other cases of germ disease, and with the perseverance which characterizes the truly scientific man, Mr. Cheshire has successfully carried on and completed his work, and has thus rendered powerless one of the worst enemies the bee-keeper has as yet had to contend with.

In our next issue we will give a subsequent article on this subject from Mr. Cheshire, which will explain some points, and add further details of his experiments.

Honey at the Indiana State Fair.

The *Indiana Farmer* describes as follows the honey display at the Indiana State Fair:

The display of honey and things pertaining to the bee-keeping interest at the State Fair, was the best that has ever been made at any of our Fairs, and was very creditable to those who took part in the undertaking; much more so than might have been the case in former years, on account of the present poor season, requiring a very great amount of care and work to put things in a creditable condition. Mrs. C. Robbins, President of the State Bee-Keepers' Society, and the Treasurer, Mrs. L. Stout, have been untiring in their efforts to induce bee-keepers to show what an advancement had been made in the business, within the last few years. Mrs. Cox and Mrs. Lane, of Boone county, were both contributors and took part in entertaining friends. Mrs. Robbins, Mrs. Stout, and Mrs. Cox each made a display of honey-producing plants, the two former being very fine indeed, including, as they did, almost the entire list of the honey-producing plants of this State, and we think, if the truth were

known, it would appear that the committee had to resort to straws to decide which was entitled to the "red ribbon," the long straw falling to Mrs. Stout.

Mr. S. H. Lane, of Whitestown, Ind., was awarded the first premium on extracted honey in the most marketable shape; also on comb honey, and for the best display of honey. Mr. Cox receiving the second premium on the latter. Both gentlemen exhibited a show-case filled with one-pound sections; one side of Mr. Cox's case being filled with sections heart-shaped and diamond. They also showed honey in many sizes and kinds of retail packages. A globe, jar and cross in the collection of Mr. Lane, attracted much attention.

The greatest attraction to the uninitiated was the word "HONEY" in letters of comb honey, as made by the bees, directly in the sections; the spaces forming the letters being filled by the bees with comb, afterwards the outside blocks being removed leaving the letters standing in bold relief. All of which was performed under the careful hand of Wm. Hutchinson, whose apiary is near Acton, Marion county.

Taking the honey display as a whole, it was creditable to our State Society, to which all the exhibitors belong, and we are well satisfied that it has done much good, not only among bee-keepers, but in the way of educating the people as to what we as bee-keepers are enabled to offer them in the way of an enticing luxury for the table.

Seasonable Hints.

The *American Agriculturist* for November contains these seasonable hints to bee-keepers:

Small fruits and flies are now gone, the cooler weather excites the appetites for sweets, and if your comb honey crop is not sold, now is the time to dispose of it. The local market should be looked after first, and no honey sent to the distant markets until the local demand is supplied. If there is no local market, make one; if you have never tried, you will be astonished at what can be accomplished by a little push. Honey should not be "kept over" in hopes of receiving better prices, as old honey is not preferred to that which is new.

Contract the entrances to the hives so that mice cannot enter. If the bees, which are to be wintered out of doors, have received no protection, furnish it at once. Have everything in readiness if they are to be wintered in a cellar or a "clap." When it is evident that the bees have enjoyed their last autumn flight, carefully carry them in.

The "Autumn Leaves" which will bring the most returns are, no doubt, the Leaflets—"Why Eat Honey?" Scatter them and see the effect in selling honey in every neighborhood, at good prices. Two hundred will be sent postpaid for \$1.00; 500 for \$2.25; 1,000 for \$4.00.

CORRESPONDENCE

For the American Bee Journal.

Ventilating Bee-Hives.

H. W. S. 9

The subject of ventilation of bee-hives is often mentioned in the BEE JOURNAL, and yet I do not remember that any writer has ever said anything as to how much ventilation should be provided for, or in what direction, whether through, around the mass of bees, or whether occasionally or at all times. Once in awhile upper or lower ventilation is spoken of, but nothing of what is meant by either. The subject seems to be very carelessly thought of, and, I suppose, often very carelessly practiced, when practiced at all. Now, I wish to "ventilate" my thoughts on the subject.

When bees are hibernating (by which I mean, passing the winter in close quarters, generally in a quiet and sometimes dormant state), they throw off a great deal of vapor, which, in a state of nature, generally in a hollow tree, passes into and is absorbed by the rotten wood, and there retained until used up by the living tree, or evaporated by the heat of the succeeding summer. Bee-keepers often neglect to make any provision for imitating this natural process, consequently the vapor condenses and runs down the sides of the hive, as water, sometimes freezing up the entrances, and always incommodeing the bees, thus making the combs damp and moldy, and otherwise causing injury.

To remove this accumulating vapor, in any manner imitating the natural way, seems to me to be very desirable, and to do so, many plans are used, which plans are generally called "ventilation." But here comes one of the difficulties. Some seem to think that a strong breeze should blow through the hives, and thus, I think, many weak colonies are actually killed, although a very strong colony with ample supply of honey can stand almost any amount of ventilation. In practice, it seems to me that a very slow ventilation is what is wanted, and all that is wanted, any other than a slow one being injurious. This is often accomplished by filling the second story with chaff, or any loose material which will allow the vapor-laden air to slowly pass through, or will retain it and hold it as water until spring comes, when it can be dried out for use again during the next winter.

There are many inconveniences about this plan which I avoid by the plan I use, and which I have practiced for several years, having learned it from Mr. Joseph Savage, of Ludlow, Ky., opposite Cincinnati. I make a frame of thin lumber, say half or three-quarters of an inch, of the same size as the second story of a Langstroth hive, but only 6 inches high.

On the bottom, or a little way up from the bottom (varying, as I use them on the lower or second story of a hive), I use coarse, strong muslin. This receptacle I fill with layers of cotton batting. I use one and a half pounds in each, but that is, perhaps, more than is necessary. Mr. Savage makes them only four inches high, and uses less cotton. Before putting these over the colonies, I put a couple of small strips across the frames, and above them a cover of muslin.

The sticks keep the muslin slightly raised in the middle, so that the bees can pass over the tops of the frames, from one frame to another, without being chilled in very cold weather, the top of the hive being the warmest place. Whatever vapor is produced by the bees, rises and passes through the muslin cover, and the muslin bottom of the top-box and passes into the cotton-batting, rising as long as it is in the state of vapor. If it condenses, it is held as water.

In putting on the wooden cover or roof, I leave one end raised about 2 or 3 inches, which allows any wind to pass through, over the cotton-batting, taking up any vapor which may happen to be there; and I find that when thus arranged, the cotton is always dry; but if the cover is put down close, the cotton is often wet, and thus partially hinders the passage of the vapor. The muslin and the cotton-batting seems to allow just about rapid-enough ventilation. If it were more rapid, it would not only take off the vapor, but also the heat; and if it did not freeze the bees, it might make them uncomfortably cool, and thus cause a greater consumption of honey.

The muslin and cotton-batting resemble the bed-clothes upon a sleeping person. The bed-clothes allow the moisture to pass through sufficiently, but retain the heat. You will see that this arrangement resembles very much the plan of filling a top-box with chaff, and perhaps, so far, is no better; but it is much handier.

Whenever you wish to look at your bees in winter, you can lift off the top-box without the least danger or hesitation, and then you have only the muslin cover, of which you can turn up one corner or more, dependent upon the activity of the bees, or other circumstances; whereas, if you have a box filled with chaff, perhaps with a loose bottom, you very likely have to operate 15 or 30 minutes before you can see the bees. I have found this plan very successful, and so has Mr. Savage.

I have several times noticed the mention of the use of enameled cloth over the bees in winter. It appears to me that the use of such material, directly hinders the desired effect, as it is impervious to air or vapor. On page, 663, Mr. C. W. Dayton relates his experience in using enameled cloth, and shows how the vapor condensed on the under side of the cloth, which he got rid of by turning back part of it, thus opening a passage upward; and in another case by perforating it, and thus allowing the moisture to pass through. The whole secret, in my opinion, is to cause a

slow, upward passage of the vapor, by the use of a porous cover. Then a roof must be used to shed the rain, but it must be open at the sides to allow the wind to blow the vapor away. By raising it at one end it makes a greater slope to carry the rain off.

I put my ventilators on the hive as soon as cold weather approaches, say in the latter part of September, and leave them on until May or June, and I do not think that it would do any harm, but possibly would be best, to leave them on through the summer. They are excellent equalizers of heat, keeping it in in winter, and I think that they would also act to keep it out during the summer; but I have never tried them in the summer.

Cincinnati, O.

For the American Bee Journal.

Utah Bee-Keepers' Convention.

The Bee-Keepers' Convention met at 7 p. m., at the City Hall in Tooele, on Oct. 6, 1884. Mr. A. M. Musser called the meeting to order.

Tooele City was represented by Mr. T. W. Lee, of Tooele county. There are thirty bee-keepers in Tooele City. Last fall they put into winter quarters, 214 colonies of bees, and during the winter their losses were 38, and their increase was only 15; hence a decrease of 23. They have taken 851 pounds of honey this season. Mr. T. W. Lee has 60 of the above colonies, and has taken 240 pounds of honey. In the spring their bees did very well, and their prospects were rather flattering, but the caterpillars and worms damaged vegetation and deprived the bees of good pasture, hence their report would not be as favorable as last year. There was no foul brood in the county, and the bees are now in a good condition. Bees gathered honey fast, although many colonies had to be fed in the spring and summer. Honey was selling for 20 cents per pound and in good demand.

John Morgan, of Mill Creek, took care of two colonies of bees, and increased them to six, besides taking considerable honey. He was beginning to enlarge his stock of bees, but his ill-health had kept him from paying attention to his apiary. Although the smelters, he thought, were a detriment to bee-culture, yet he thought it was not that alone which had caused so much loss, as the two colonies being increased to six was a proof to the contrary. He further said, that we must keep up the bee and honey interest, for the Territory could not afford to go back on so profitable an industry.

Alvin Stewart, of Mesa, Maricopa county, Arizona, reported that their new settlement had sent to California and imported 25 colonies of bees. Daniel Bagley took 7 colonies and increased them to 27. He also told of a neighbor who took 2 colonies and now has six. Bloom was very abundant and the season long, so much so that he cut his lucern five times.

George Baily of Mill Creek, had taken about 2,500 pounds of honey,

and had kept his bees in two divisions, one part of them at his home in Mill Creek, the other, up on the bench, about 150 colonies; he had been too busy to give his bees full attention, or the results would have been better.

Wm. M. Egan, of this city, began last spring with 19 colonies and now has 25, and has taken 1,500 pounds of honey. He considers this season a very poor one for bees and honey; for wintering he approves of Hill's device, as an opening on top of the frames with chaff protection proves a success with him. When necessary in early spring he gives them smut dust, placing it outside where they can work on it for pollen; he thinks that it is far better than flour, and when they are scarce of honey, he gives them a frame of comb honey.

T. B. Clark, of Davis county, said that in Farmington there are about 150 colonies of bees. They averaged 50 pounds of honey per colony. He was pleased to say that the foul brood which had infected their bees so lamentably is fast disappearing. Protect the bees and spare the toads. In France, gardeners often bought toads to devour the vermin in the gardens.

G. W. Bean, of Sevier county, says that the bees have done poorly this season.

In St. George, John Campbell said that the bees did well in the spring, but protracted rains followed by drouth disappointed the bees, and the keepers, too, early in the spring. Some colonies cast 3 swarms. There are about 400 colonies in the place.

Samuel Nowel, of this city, had 2 colonies in the spring, has six now, and has taken 200 pounds of honey.

E. Stevenson, of this city, has 45 colonies on cottonwood. He has been absent one year and considers the season a very poor one. His bees have produced 1,500 pounds of honey in 2-pound sections.

J. E. Murphy, of Mill Creek, has 66 colonies, 36 of them being on Mill Creek bench. He has taken 2,500 lbs. of honey, and about 1,000 more of comb honey yet to take.

It was advised by the meeting to extend the organization of bee-keepers' association through the various counties, and it might be expected that Mr. Stevenson would visit the settlements in this interest.

The convention adjourned until next April. E. STEVENSON, Sec.

A. M. MUSSER, Pres.

For the American Bee Journal.

Sexual Functions of Bees.

WM. MUTH-RASMUSSEN, C.

Having read Mr. Kohnke's article on this subject, on page 633, I desire to ask him a few questions, and also to add a few comments: First. Does a laying worker ever deposit eggs in drone cells? If so, is there any difference in the size of the drones reared in such cells, from those reared in worker-cells? I do not now remember of ever having noticed this, nor have I seen it mentioned in print. I know that the drones reared from laying

workers, are usually a little larger than a worker-bee. Second. Does Mr. Kohnke know whether laying workers, or any workers, are in possession of a seminal sac capable of receiving and retaining the seminal fluid from the drone?

Now, in regard to the fertilization of worker-bees: "The same scientists have also proven by ocular demonstration that freshly-deposited eggs laid by a mated queen in drone-cells, or those laid by a queen not having mated, as also those laid by workers, are devoid of these sperm-filaments." Of what use, then, would fertilization be to a worker-bee, when it cannot lay female eggs, but can produce male eggs without the sperm-filaments, that is, without fertilization? Why cannot a worker-bee produce female eggs? I think, because it cannot become fertilized. And why not? Because the seminal sac has been so stunted with the whole organism of the individual bee, that it is incapable of receiving and retaining the seminal fluid. The writer in *Bienenzeitung*, commenting on Mr. Kromer's discovery, asks: "Had the worker in question a desire to mate? And further on he says: 'The observed fact is also proof conclusive, that the stunted or smaller sexual organs of the workers admit of copulation.' I admit that this may be so. I believe that young horses, after castration, sometimes show signs of sexual excitement; but the fact of copulation does not prove that fertilization takes place. 'What did such eggs hatch? Only male bees, or drones.' As drones are produced by queens without fertilization, reasoning from analogy, they should likewise be so produced by laying workers; consequently the mating of a worker-bee with a drone may be only a freak of nature, induced perhaps by higher development and vigor of some individual worker. 'Nature does nothing without an object;' but the object is not always accomplished.

Independence, Calif.

For the American Bee Journal.

Tiering-up Sections—Hibernation.

C. THEILMANN, C.

I commenced the season of 1884 with 110 colonies, which I increased to 190 by natural swarming, on Mr. Heddon's plan of preventing after-swarms, which I found to be the best method of any that I have ever tried. I obtained about 2,000 pounds of comb and 400 pounds of extracted honey.

The forepart of the summer was middling good here for bees, with a good prospect for basswood honey; but as the blossoms began to open, the greater part of them turned black and fell off, so the bees secured but little honey from that source. The hills and valleys were covered with flowers until the latter part of September, when they ceased without being frosted, although the bees got but little fall honey. Red clover, pumpkins, tomatoes, and here and there some wild flowers are in bloom

yet; the bees have brought in some pollen every day, for the past 10 days, as the weather has been unusually warm for this time of the year. It has been 15° to 80° in the shade at noon, though the nights have been cold enough for a slight, white frost in places.

In June, when about ⅓ of my colonies had their surplus arrangements about ⅓ filled with honey, and the prospect for more being good, I tried Mr. Heddon's tiering-up plan. All of these colonies were very strong, and they immediately occupied and commenced to work in the empty sections. After they had them partly filled, they did not find honey enough, with all the abundance of flowers, to complete the work which they had begun; the result being that about ⅓ of my surplus honey was not capped over when the season closed. I never had my comb honey in such bad condition since I began to keep bees, and I hope that it never will be repeated. I am sure that I never will have it occur with the tiering-up plan, as I will never again tier-up until the first set of sections is capped over, or the sections sealed. This tiering-up plan beats me in a poor honey season, but I do not think that it has been so with others. It would be all right, if Mr. H. or some one else could foretell the season ahead.

I cannot close without making a few remarks on hibernation. Mr. Clarke writes a great deal about it, and yet does not say anything; that is, he does not tell us how to proceed or to perform with our bees in order to have them hibernate.

All practical and experienced beekeepers know that bees winter best when they are in a quiet state, but I have never seen or heard of one who knew of a method to get and to keep the bees in that quiet state, or "to hibernate," as Mr. Clarke terms it, during their winter confinement. In all my wintering of bees, I remember of only one winter through which they passed in that dormant state all winter, and until I put them out in April.

In the fall of 1872, I had 24 strong and heavy colonies in Langstroth hives, for which I built a bee-house in a side-hill near the apiary. I banked it up to the shingle roof, except the front which was double-walled and filled with sawdust between. It was frost proof. I made benches all around the inside about one foot from the ground, on which I put the hives, on Nov. 15. I weighed them while taking them in. After I had them all in, I took the caps and honey-boards off of all the hives, which left the frames bare. The entrances were left wide open, and no holes were made in the combs, nor spreading of frames. I shut the door and let them take care of themselves.

During the winter I went into the bee-house two or three times to see the bees, and each time found them as if they were asleep. They came through the winter in the best condition of any bees that I ever wintered. They consumed only from 3 to 7 pounds of honey per colony, for I

weighed them again when I put them out on April 15, 1883. No mold or dampness could be seen, the combs were as bright as they were during the summer, the colonies seemed to be stronger than they were in the fall, and not a handful of dead bees could be seen in the bee-house.

The next winter I put them and their increase (74 colonies) into the same bee-house, but I did not take off the honey-boards. During that winter all but 4 became diseased, and by spring died. I could not account for that.

Since then I have never tried to winter my bees as I did the 24 colonies spoken of, but I will try it again with some of my bees during the coming winter.

In my earlier days of bee-keeping, I did not read any bee-periodicals; but since I do read them I see many ways in which bees are wintered. Some of the writers of the BEE JOURNAL must have different bees than mine are, when they can stand 65° to 90° above zero in their winter confinement. Mine do best at 42° above zero; that is, they are the most silent at that point. The farther above or below 42°, the stronger the noise becomes in the bee-house. This has been my experience for the past ten years.

Theilmanton, Minn.

For the American Bee Journal.

Bees and Flower Petals.

CLARENCE M. WEED. ♀

Eminent botanists believe that many ages ago there were none of the large-petaled, parti-colored flowers that now give such touches of grace and beauty to our landscapes. Then flowers consisted only of the essential pistils and stamens, as is the case of the inconspicuous blossoms of our hickory, oak, and other trees of the present day. These flowers must have been almost wholly wind-fertilized, but with the introduction of insects, and especially the bees and wasps, it became desirable for some species to be fertilized by other means than the very wasteful process of wind-fertilization. The way in which the showy parts were evolved is supposed by our greatest botanists to have been somewhat as follows:

Every gardener is familiar with the fact that plants, under certain conditions, will vary, or sport as it is called, from the one which produced the seed from which it sprung. This often occurs, not only in our cultivated plants, but also in many of our wild flowers. It is by some such process as this that the first petals are supposed to have been developed. Some of the outer stamens on a primitive flower became flattened, thus making the blossom more attractive than its less-favored, non-sportive neighbors. As it was more conspicuous, it would be more freely visited by bees and other insects, and, hence, would be more certain of fertilization by pollen from another plant; because of which, as was so clearly proved by the illus-

trious Darwin, the seeds produced by the flower would be better developed and produce stronger plants than the others. These plants would, in turn, produce flowers having similar peculiarly-developed stamens, which would again be more freely visited by insects, and consequently develop thriftier seeds. And so the process would go on until a row of the insect-attracting petals would be developed, as in the case of our apples, pears, and the great majority of our common flowering plants.

While writing, I have before me one of our beautiful white water-lilies which admirably illustrates the evolution of petals. Toward the centre of the flower are a large number of the yellow stamens with the pollen-bearing anthers upon their summits. A little farther out, some of these stamens have become flat, with the anthers only partially developed, while still farther out are stamens wholly flattened and with no trace of anthers, only differing from the petals by their smaller size and yellow color. Here we have, as Grant Allen, the English naturalist, expresses it, "stereotyped as it were, the mode of evolution of petals from stamens."

Michigan Agricultural College.

For the American Bee Journal.

Wabash Co., Ind., Convention.

The Wabash County Bee-Keepers' Association met in the Court House at Wabash, Ind., on Oct. 4, 1884. The meeting was called to order at 11 a. m., by President Singer. As there were only a few of the members present, the reading of the minutes was deferred until the afternoon session. The programme of questions was next read by the Secretary. The first question taken up for discussion was, "Does bee-keeping as a business pay?"

Mr. Singer said that his bees netted him over \$2 per colony, the present poor season, and he thought that in a good season bee-keeping would pay well. Mr. Cripe said that he realized \$8 for comb honey from his best colony, without any feeding or special care. Mr. Coffman thought that this was the poorest season since he began to keep bees, which has been over 40 years. All agreed with Mr. Coffman that this had been a very poor season. The most of the members were of the opinion that, in a good season, bee-keeping pays well, compared with other pursuits.

"Does it pay to use comb foundation? If so, at what price?"

Mr. Singer said that if a colony of bees was provided with foundation, it would give all its energies to gathering honey, instead of building comb. Consequently the bees would enter the sections sooner. Mr. Hess said that when a swarm issued it was prepared to build comb; but had not enough wax secreted to fill an ordinary hive with the necessary combs. He says that all swarms should be provided with some foundation. Mr. Singer said that when bees were secreting wax, they would cluster in large

bunches, and if a swarm was hived on full sheets of foundation, it would break the cluster, and would immediately stop secreting wax. The majority of the members agreed that foundation was profitable even at \$1 per pound. For sections, flat-bottom foundation was preferred.

"Which is preferable, natural swarming, or increasing by division?"

Mr. Cripe had had some experience in dividing colonies, but preferred natural swarming. Mr. Singer had increased his number of colonies by division, and prefers the method when working for increase only. It was decided that natural swarming is the best way, if producing comb honey.

"Will bees swarm when they have plenty of room in the hive?"

Mr. Cripe said that if plenty of room were given them early in the season, they would not be so likely to swarm. Mr. Hess said that bees were not likely to swarm when in large hives, as he formerly used very large hives and had had no swarms. Adjourned to 1 p. m.

At the afternoon session the minutes of the previous meeting were read and adopted. The discussion began with the following question: "How shall we prepare bees for winter?"

Mr. Whitlow described his method of packing them in sawdust, about 4 inches deep all around the hive, and a chaff cushion on top, and had lost only one colony in 4 years. Mr. Singer crowds his bees to one side of the hive, by means of a division-board, and packs chaff in behind them. He puts his hives in a row and boards up at their sides and backs, and fills in with chaff or fine straw, leaving the front open. So far he had lost none by this method. Mr. Gray objected to the use of fodder for a protection, as he had used that last winter, and had much bother with mice getting into the fodder, and also into the hives. Mr. Maures packs his bees in chaff, being something similar to Mr. Singer's plan, with the exception that he packs in front of the hives also. Mr. Coffman winters his bees without much protection, except chaff cushions on top.

The feeding of bees was next discussed. Mr. Coffman feeds his bees in the open air, late in the evening, and says that they take the feed up so quickly that his neighbors' bees have no chance to rob. When he prepares his bees for winter, he takes frames of honey from his best colonies and gives them to the weaker ones, thus giving all plenty to winter on. Mr. Fulton feeds his bees inside the hive, and prepares the food by taking coffee A sugar, dissolving it in water, as much as the water will dissolve; he then puts it in glass cans or bottles and sets it in the sun until it is quite warm, after which it is ready for use. Mr. Hess prepares his feed in a similar manner, except that he uses granulated sugar. Nearly all of those present favored inside feeding, and thought it much the safer plan, on account of the danger from robbing, and no strange bees would be fed in that way. Mr. Singer feeds his bees

in the morning, in order to give them something to do during the day, so as to keep them away from the cider mill, as they will carry home great quantities of cider if left without any thing else to work on.

Mr. Singer read an essay on "Feeding Bees."

It was decided that the Secretary should make out a programme for the next meeting, and have it published in all the county papers at least four weeks before the time of meeting, in order to gain a large attendance. The next meeting will be held on the second Saturday in April, 1885.

HENRY CRIPE, Sec.

AARON SINGER, Pres.

For the American Bee Journal.

My Report for 1884.

EUGENE SECOR. ♂

"How doth the little busy bee
Delight to buzz and bite;
To gather honey all the day,
And eat it up at night!"

I do not know who is the author of these lines, but whether it is Cowper or William Nye, they express the disappointment, if not the disgust, of some of the bee-keepers of this year.

It is, perhaps, just as well that bee-keeping is not all sunshine and flowers, else the business would soon be overdone. If every novice embarking in the business could, without any experimental preparation, achieve just as good results as the older members of the fraternity, and if there were no drawbacks, such as bad seasons, wintering troubles, swarming frenzy, etc., honey would soon be so cheap that the poetry of bee-keeping would soon degenerate into the dullest prose, with about nine-tenths of the persons now engaged in it.

To preface my honey report this year, I shall say that the weather was against me. But to lay all the blame at the door of the clerk of atmospheric conditions, is a little more than even my elastic conscience will approve of; for, to tell the whole truth, my bees were not always attended to precisely at the time when I knew they needed attention. Other, and as I thought more profitable business, claimed my time, and only the spare hours were given to the "little helpers."

Spring opened auspiciously. From early in April, when snow disappeared, there was hardly a frosty night. The genial sunshine and bursting buds made glad the heart of every lover of Nature; the flowers sprang up to kiss and welcome the fair maiden, and the "busy bee" sang its delight by a constant hum of busy contentment. The prairie anemones shot out of the recently snow-covered ground; the willows came on apace; the fruit blossoms filled the air with their fragrance; dandelions in profusion invited to the feast, and the fields of white clover seemed to consummate the climax of hope in the enthusiastic apiarist. Thus matters ran along in the poetical groove for a month or two, when it was discovered that the season was not yielding its promised

fruition. While we got some white clover honey, we received none from sumac, which is one of our best honey plants, and basswood yielded but little. Then came a drouth for a month or so during July and August, from which the fall flowers never fully recovered; and our fall crop, which is usually our most certain one, was hardly up to the average.

I began the season with 23 colonies, nearly half of them being very weak. I set apart 11 of them to run for extracted honey exclusively, and the others were run for comb honey. Of extracted honey I obtained 770 pounds, being an average of 70 pounds per colony. The largest yield from one colony was 144 pounds. No increase was obtained from them. I secured 501 pounds of comb honey in $\frac{3}{4}$, $1\frac{1}{4}$ and $1\frac{1}{2}$ -pound sections—an average of only 42 pounds per colony, and increased them by 9 natural swarms. The largest yield of comb honey from one colony and its increase was 70 pounds, spring count.

While our season's work has not been as satisfactory as we desired, yet we have something with which to sweeten our pancakes the coming winter. Honey retails, in our local markets, at 20 cents per pound for nice comb, and 10 to 12 cents for extracted. I should have no difficulty in selling twice what I produce, right here in our local market. No one that I have inquired of has done as well as I this season. There is not enough honey in this part of Iowa to supply the home demand.

Forest City, Iowa.

For the American Bee Journal.

Filling and Capping of Honey-Cells.

DR. D. C. SPENCER. ♀

How does the bee deposit the honey in the cell and manage it while so doing, is a question that has doubtless puzzled naturalists in all ages; and its answer has been hidden, hitherto, among the secret mysteries of this wonderful insect; at least so far as the knowledge of the writer extends.

Having seen in the current volume of the BEE JOURNAL, an answer given by one of the "oracles," that the honey was held in position by force of capillary attraction; and having seen no exception taken, nor objection presented to that answer, I concluded that that was the limit of present knowledge in this direction, and so I put forth the "what and the how" of that wonderful *modus operandi*, as I have seen it; thus endeavoring to add another laurel to the reputation of these marvellous little architects.

This very interesting discovery came to the knowledge of the writer in this wise: In the summer of 1880, during a sudden flow of nectar, the bees in his observatory hive built a piece of comb as a "wing," or an "L" extending from the side of an outer comb to the glass. As the new comb was extended to the glass, it was so arranged by the builders as to have the glass form one side of the last cell, thus affording a rare opportunity

for the observer to watch the interesting process of constructing and filling of the cells.

When the construction of the walls had so far progressed that the cell was nearly ready to receive the honey, it was prepared in this manner: A bee was seen to approach the further end of the cell and eject from its mouth a clear liquid which it spread with its mandibles over its concave surface. This process was repeated several times, and forming, when dry, a thin, transparent, varnish-like coating or lining to the end of the cell. This done, the cell was ready for the reception of its treasures. Soon a loaded bee was observed to enter, and proceeding to the lower edge of the lining just finished, began to peel it up until it was detached a little, then it ejected its load beneath and behind the lining, and then replaced the lower edge of the portion that had been peeled up, and patted it down nicely, leaving a slightly convex appearance resembling a blister filled with one solitary load of nectar.

This process was repeated rapidly until this lining was seen to be detached entirely, except at its edges, where it still adhered to the sides of the cell, forming a complete diaphragm, securely confining the honey and holding it in its perpendicular position, and being forced along the walls of the cell until it was filled, usually leaving a space between it and the capping. It seemed to acquire additional strength with age, resisting considerable force before it gives way.

When viewed edgewise, this diaphragm may be distinctly seen with the naked eye, its thickness being judged to be about one one-hundredth part of an inch. Its color, when thus seen, is of an amber hue. By means of a hypodermic syringe this cell wall may be pierced behind the diaphragm, and the honey withdrawn, leaving it intact. Thus fully demonstrating its existence, and the "what and the how" of one of the many interesting processes of these wonderful God-given servants—"our pets."

Augusta, Wis.

For the American Bee Journal.

Western Bee-Keepers' Convention.

The third annual meeting of the Western Bee-Keepers' Association was held at Independence, Mo., on Sept. 24, 1884. There was an exceptionally large exhibition of bees, hives, and products of the apiary.

The business session was short on the first day. At 4 p. m. the Secretary, C. M. Crandall, called the meeting to order, and Jas. D. Meador was called to the chair. The following committee was appointed to solicit members: Jas. D. Meador, L. W. Baldwin, and Jas. A. Jones.

After the preliminary exercises, the subject of "Introducing Queens" was fully discussed.

The Thursday morning session was held from 10 a. m. to 4 p. m. Officers were elected for the ensuing year, and a number of new members were re-

BEES AND HONEY FOR 1884,

ceived, some of them being ladies. The meeting decided to hold its semi-annual meeting next spring, at St. Joseph, Mo. It was left to the executive committee to choose the time and place for the next annual meeting.

The minutes of the Wednesday afternoon session were read and approved, immediately after which the report of the committee on subjects for discussion was received, and was as follows: 1. "Is it profitable to extract honey for the purpose of finishing up partly filled sections?" 2. "Is it profitable to rear queens after the honey season fails?" 3. "Is it advisable to manage an apiary so as to get a larger part of the honey gathered as surplus, for feed in winter?" 4. "Taking all things into consideration, what time of the year is the best for Italianizing an apiary?" 5. "Which is the best method for rearing queens?" 6. "Is the extra prolificness of the queen an advantage to herself and colony?"

The report was adopted, and the first proposition of the report was taken up for discussion. Mr. A. A. Baldwin regarded the plan as profitable, from his own experience, and had fed extracted honey with favorable results. Mr. Conser reported his experience as having met with contrary results, and would not advise the feeding of extracted honey. Mr. W. B. Thorne gave his experience as being, that his bees had a tendency to swarm as soon as he began to feed them.

The second question was then discussed. Mr. E. M. Hayhurst regarded it profitable, as did also Mr. Jas. A. Nelson. Mr. A. A. Baldwin expressed the opinion that queens reared at such a time were not as good as they otherwise would be.

Upon the third proposition, Mr. Armstrong expressed himself as favoring the plan. He had done so, using a sugar with good results. Mr. P. B. Thaxton stated that from his limited experience he had formed the opinion that bees always wintered best on honey. Mr. Jas. A. Jones was of the opinion that either honey or sugar could be used for wintering, and that he would take all the honey possible, as could be sold at a price exceeding the cost of sugar. Mr. W. B. Thorne stated, rather to the amusement of the Association, that he would feed his bees on sweet cider, this fall, and report the result at the next meeting. Mr. A. A. Baldwin stated that his plan was to manage so that his bees would store all their honey in sections, and then feed them white sugar for winter food; that at the present price of extracted honey, the feeding of sugar was advisable.

The fourth subject was taken up in the regular order, and, as had the other question, it met with general discussion.

Upon the fifth question Mr. E. M. Hayhurst expressed the opinion that if an apiarist buys his queens, the fall is the best time; but in case an apiarist rears his own queens, the best time is when the honey-flow ceases. Mr. F. G. Hopkins' opinion was, that the best time was when it best suited

Names and Addresses.	COLONIES.		Honey Crop—lbs.		Bees-wax.
	May.	Oct.	Comb.	Extract'd	
E. Armstrong, Jerseyville, Ill.....	40	90	1000	1000	50
W. B. Thorne, Glenn, Kas.....	17	21	150	1165	65
J. F. Baird, Blue Springs, Mo.....	70	120	1000		40
P. B. Thaxton, Independence, Mo.....	17	39	200	700	
F. G. Hopkins, St. Joseph, Mo.....	9	19	450		
John Conser, Glenn, Kas.....	46	59	533	884	22
F. O. Shepherd, Arrow Rock, Mo.....	120	190	300	4000	150
J. George, Independence, Mo.....	52	81	1500		10
A. A. Baldwin, Independence, Mo.....	78	118	3200	100	
F. J. Farr, Buckner, Mo.....	120	160	1800	400	
Ulysses Adams, Missouri City, Mo.....	4	13	300		
L. W. Baldwin, Independence, Mo.....	140	185	5650	1000	
John Long, Independence, Mo.....	8	22	175	300	10
Jas. A. Nelson, Wyandott, Mo.....	57	60	300	1200	10
P. Baldwin, Independence, Mo.....	118	160	4300	900	40
Jas. H. Jones, Buckner, Mo.....	102	160	6000	500	100
J. W. Wiley, Lawrence, Kas.....	32	52	300		10
C. M. Crandall, Independence, Mo.....	73	109	2730	100	
C. R. Ormsby, Independence, Mo.....	15	26	590	20	
Moses Rowe, Grain Valley, Mo.....	36	80		2640	
H. D. Sibley, Independence, Mo.....	6	12			
Elias Ellis, Independence, Mo.....	15	18	350	40	
J. H. Fink, Independence, Mo.....	22	36	650		
Totals.....	1,197	1,830	31,478	14,949	507

the apiarist. Mr. Phidel Baldwin regarded the best time to be during the flow of honey, at which time the bees were less inclined to rob. Mr. E. Armstrong regarded the best time for the apiarist, as well as for the bees, as being as early in the season as possible. Mr. L. W. Baldwin considered the best time during the flow of honey, and regarded queens reared at other times as inferior to those reared during the flow of honey. Mr. J. D. Meador regards the time as the best during the swarming season.

The afternoon session was called to order, and the question which had occupied the time just previous to the noon hour was taken up.

Mr. Conser considers the height of the honey-flow as the best time for Italianizing, and that queens can be reared cheaper at that time. Mr. D. G. Parker concurred in the same opinion.

The following officers were elected for the ensuing year: President, Mr. A. A. Baldwin, Independence, Mo.; Vice-President, Mr. E. Armstrong, Jerseyville, Ill.; Secretary, Mr. C. M. Crandall, Independence, Mo.; Treasurer, Mr. Phidel Baldwin, Independence, Mo.

Immediately upon the election of Mr. Baldwin, as President, he was escorted to the chair, and made some remarks.

Under the head of miscellaneous business, Mr. P. Baldwin was appointed a committee of one on statistics, to report on the following day.

After some further discussion the session adjourned until 7:30 p. m.

The evening session was occupied in discussion. The committee on subjects for discussion made report of the following additional subjects, viz: 7. "What is the best practical method of controlling swarming?" 8. "Is pollen in the hive detrimental to suc-

cessful wintering?" 9. "Which is the most profitable production, comb or extracted honey?" 10. "Does the bee-keeper or the hive, practically, have the most to do in securing the largest amount of honey?" 11. "Are vicious bees better honey-gatherers than gentle bees of the same race?" 12. "Will it pay to plant for honey only?" 13. "What is the best remedy for bee-fever?"

The discussion of the evening began upon the sixth subject.

Mr. A. A. Baldwin said that he preferred a queen that would just keep up the colony. Mr. E. Armstrong said that the present year had been an exceptional season for bees to breed, and asked for information as to how such could be prevented.

Mr. J. D. Meador said that he thought that it was due to the extra amount of pollen. The most of the members concurred in the opinion that it had been an unusual season for breeding; and further, that bees had bred later than usual. A vote being taken to decide whether, in the opinion of the Association, it was the queen or bees that caused an excessive production of brood, it was decided that it was due to the bees.

Mr. L. W. Baldwin said that while his bees were at work on the Spanish-needle, they would return to the apiary and fly around as if lost, and then alight on the brush and die. His colonies were very much weakened by death in this way.

The seventh question was discussed.

Mr. P. Baldwin said that he had been trying to control swarming, for many years, and in his experience, what would work successfully one year would fail the next. He had tried caging the queens, and they would swarm on the next day, over the caged queen, and so on for several days.

Mr. L. W. Baldwin expressed the opinion that it was best not to attempt to control swarming, but to know what to do with swarms. His method, during the past season was, as soon as a swarm issued, to take the old queen, and in three days destroy all the queen-cells but one, and give a ripe queen-cell. The method had worked to his satisfaction. Mr. C. M. Crandall had successfully operated the same plan.

As to the eighth question discussed, the following resolution was introduced:

Resolved, That the pollen is not detrimental to successful wintering.

Upon the tenth question the Association almost unanimously agreed that the secret lay in the management of the bees, and consequently to the apiarist was due the amount of honey.

The Association was called to order at 10 a. m., on Sept. 26, by President A. A. Baldwin. Under the head of miscellaneous business, Mr. F. G. Hopkins was appointed as a committee to arrange for the spring meeting, which will be held at St. Joseph, Mo.

The discussion was again resumed, by taking up the eleventh question. The discussion became general, and the general opinion expressed was that the vicious bees were not the best honey gatherers.

"Are bees more inclined to sting a dark complexioned than a light complexioned person?" was the next subject for discussion, and upon it the Association generally agreed that they were. With the discussion of this question the morning session closed.

Upon convening in the afternoon, the various committees of judges busied themselves in awarding nearly \$200 in premiums, which were announced immediately after the Association was called to order at 4 p. m.

After the awards, the convention received the reports of the different committees, and then adjourned.

C. M. CRANDALL, Sec.

A. A. BALDWIN, Pres.

For the American Bee Journal.

The Use of Phenol on Foul Brood.

A. R. KOHNKE, ♂

On page 644 is an article on the above subject by Mr. F. Cheshire. I am not enough of a microscopist to know whether or not Mr. Cheshire is right in his classification of micro-organisms; in fact, these nice distinctions may well be left to the expert in scientific microscopy, without affecting the main question of prevention and cure. But to certain claims and statements of Mr. C. I must take exception. I will first take into consideration the means of the propagation of the disease.

Mr. C. speaks of "spores which fly about in the air and settle here and there." Well, if that is the case, and most likely it is, the air in a hive containing a diseased colony must certainly be full of them, and permeate every nook and corner, settling also on the cappings of sealed honey, and

on the surface of honey not sealed; this, Mr. C. thinks, is very rarely the case. It is not only equally probable but certain, that the spores are carried from one hive to another, not only by the winds and feet and antennae of the bees, but also the honey-robbing bees carry them from the diseased colony to healthy ones. If it were a fact that no spores settled in the honey, as Mr. C. says that he never found any, why would it be so very absurd to feed such honey to healthy colonies, as Mr. C. also claims? These statements and claims are not consistent with sound reasoning. Mr. C. again says, "The disease lies wholly and absolutely in the blood," but he denies that the food given to the larvæ is the transmitting agent of the spores. May I be pardoned for asking the question, how they got inside the larvæ and into the blood?

Again, whether or not the seed-germs of the disease are called micrococci, or simply spores, does not make so much difference, but they do pervade the dried larvæ, and are the means of transmitting the disease. Mr. C. lays great stress on the "antennae" of the bees as being the chief means of carrying the spores from one place to another; those spores which he says, "fly about in the air." If that be true, it would be equally as reasonable as to suppose that men may carry more dust on their noses than on the rest of their bodies. Whether or not bees carry the spores on their toes or on their noses, from one hive to another, has, perhaps, not yet been discovered, and is not of so much consequence as to know that everything coming in contact with an infected hive or colony will transmit the disease. And now to his method of cure.

As a remedial agent, he mentions salicylic acid, and raises three points of objection to its use: "First, it is troublesome in application, on account of having to spray the infected combs and then feed the bees with medicated syrup." But I notice that in treating the colony which was furnished him for a test, he sprayed, too, and the feeding was done by filling the cells of the combs in the diseased colony with his medicated syrup out of a bottle with a very small opening. If no spraying is done, how can the spores in contaminated combs be destroyed, unless the combs are entirely removed, which is certainly the best plan? His method of feeding is certainly much more troublesome and tedious than to feed salicylic acid in syrup from any common feeder, out of which the bees will not take his remedy; unless it is poured upon their backs and forced down their throats, so to speak, they will not accept it.

2. He says, "The question of dose has never been worked out." Mr. C. is evidently not well versed in apicultural literature. The doses, as given in my little pamphlet on foul brood, are as exact and definite as are required for the administration of the most virulent poison. They were published in Germany as early as 1877.

3. "It has," Mr. C. says, "from a mistaken idea of its insolubility, been associated with borax. It adds to the complexity and nauseousness of the remedy." Just so; but why should bee-keepers adhere to this mistaken idea, when by using the remedy as used by its discoverer, one has a certain specific—a specific which in solution is entirely inodorous and readily taken by the bees.

To cap the climax, Mr. C. claims to have discovered in phenol a remedy to cure foul brood. One might be led to think that no means of communication existed between England and the rest of the world. I will give here a translated extract from a little book by Prof. Cech, published in 1877, pages 13, 14 and 15: "To disinfect infected apiaries with phenol proved entirely useless. Bee-hives were washed with a diluted solution of phenol, at least once a month, and all decayed brood was removed. But even if all the combs were removed, and the bees put into new hives, the brood reared afterwards died, all the same. It was impossible to disinfect hives or stay the progress of the terrible disease by the use of phenol, as proven by the treatment of a number of colonies. The experiment to also disinfect the bees, combs and decayed brood, failed entirely. The bees are so averse to the odor of phenol that they leave the hive within half an hour after its introduction, sometimes even within a few minutes. If they were confined for several hours, they would leave as soon as released. However, it seems that not all colonies are alike sensitive to the odor of phenol; although this drug, as a remedy in the hands of the unexperienced, is not to be recommended. It must be admitted, that according to the experiments of Prof. Butterow, of St. Petersburg (*Bienenzeitung* 1874 to 1876), the bees may be induced to take syrup medicated with phenol without any apparent injury, but 1-600 is the maximum dose they are able to stand. In a report sent to me by Mr. Koscec, administrator in Maximir, it is stated, that in his apiary from May 1 to Sept. 1, 1875, 40 colonies succumbed to the disease in spite of being treated with phenol in every possible manner." That is nine and ten years ago; how does Mr. C. come to claim priority of discovery? Has he remained in ignorance of these experiments all this time.

Phenol has been tried and found—wanting. Salicylic acid is not a poison, at least not any more so than vinegar; but phenol is a corrosive poison, having a very penetrating, disagreeable odor. I will quote two more of Mr. C.'s assertions: "This notion about infected hives is largely a delusion," but still, "boiling would not kill the spores." That is confusion worse confounded!

Youngstown, Ohio.

[Some of Mr. Kohnke's criticisms are as unjust as they are severe, as will be seen by referring to an editorial on the same subject on page 692 of this week's paper.—Ed.]

For the American Bee Journal.

Does Honey Agree with Everybody?

WM. F. CLARKE.

The above question rather than "Is Honey Poisonous?" is the one Mr. A. Osborn should have placed at the head of his article on page 613 of the BEE JOURNAL. This is the question he really discusses, and the only one on which there is room for discussion, it having been settled long ago by the best authorities that honey is a most wholesome article of food for the generality of people. But it is an old and true proverb that "what is one man's meat, is another man's poison."

Mr. Osborn, in the article now referred to, while virtually admitting the principle embodied in the proverb just quoted, asserts that pure honey will not disagree with any human stomach. He claims that whenever a person finds that eating honey induces "cramping or colicky pains," the reason is that the bees have been disturbed a great deal, and have dropped poison from their stings on the comb, which has dried there, and inoculated the honey with an injurious quality. Mr. Osborn advises all thus affected to eat pure extracted honey.

He appears to be ignorant of the fact that there are those who have tried again and again only to find that the purest of honey does not agree with them. I am one of that number, and regretfully own that I am obliged to forego the luxury of eating this luscious sweet, precisely as dyspeptics are compelled to deny themselves the use of many articles of food supposed to be wholesome for the million. I am not a dyspeptic, my digestion is good, and there are few articles of food fit for human use that disagree with me, but honey, unfortunately, is one of them.

Mr. Osborn virtually takes the ground that poison agrees with most people; for, while well aware that the majority can eat comb honey with impunity, he ascribes the inability of some to use it without painful results, to a peculiarity of their stomachs. No doubt some human stomachs are tougher, and can withstand poison better than others, but Mr. Osborn's explanation, while applicable to an article of food, is hardly admissible to an article, more or less poisonous, as he asserts comb honey to be.

But I take issue with Mr. O. in regard to his assertion that bees bedaub comb honey with more or less of poison dribbling from their sting ends. If this is so, alas for the producers of comb honey! Mr. O. affirms that "all who eat comb honey, eat more or less of bee-poison." I do not believe this. I venture boldly to deny it, and throw down the gauntlet to Mr. Osborn, on behalf alike of producers and consumers of comb honey. Let us have the proof of this damaging assertion, if there be any. Without the most convincing proof, a bee-keeper should certainly abstain from asserting that all comb honey is besmeared with poison, and calculated to injure all except those whose stomachs are of the strongest.

Bees do not squirt their virus like skunks, but first provide for its reception in a living body by puncturing a cell or receptacle for it. If the poison drop were not conveyed by a hollow tube at the rear of the sting with unflinching accuracy, bees would be less formidable antagonists than they are. A little poison spray on the surface of the person would be a very trivial affair. I am confident that Mr. O. is both wrong as to what he reports as a fact, and the inference he draws from it, and if so, he ought to be set right, in order that the interests of bee-keeping may not suffer from his mistakes.

Speedside, Ont.

For the American Bee Journal.

The Results of the Present Year.

JAMES HEDDON.

To illustrate the extreme sensitiveness of flowers, and how they will first withhold their nectar upon the slightest neglect by the weather, I desire to call attention to the fact that we have correct reports of average yields within 25 to 40 miles from where they have almost total failures under equally good management. How uncertain is our business! I have not received over one-fourth of an average yield. I think that basswood, our greatest of all yielders of nectar, gave us, for the first time since I have been in the business, not an ounce of surplus.

I have to report the smallest honey crop and increase in my experience, except my first year, when much of the failure was the result of my mistakes in management. In round numbers I began with 400 colonies (in two apiaries), and closed the season with only 460, and about 6,000 pounds of comb and 1,000 pounds of extracted honey. Extreme cold and drought were the cause. With the usual heat and moisture, our fall crop alone (which was a total failure) would have reached beyond the above figures.

As usual we have been making many experiments on quite an extended scale, and as these experiments were placed entirely in the hands of my foreman and class of student-apprentices, I herewith quote their decisions which are unanimous:

SEPARATORS.—We recommend the use of separators to those who cannot get nice, straight, cratable combs without them.

COMB FOUNDATION.—After several careful trials we prefer the Given foundation to use both in the brood-chamber and surplus boxes.

HIVES.—We prefer a light, small, readily-movable hive.

SURPLUSAGE.—Have it always exclusively on top, and manipulated upon the tiering-up plan.

HONEY-BOARDS.—After careful experimenting, we are positive that the skeleton-sink honey-board used with slats and double spaces, has no tendency to retard the immediate entrance of the bees to the sections as soon as the honey begins to flow, and

we deem it an indispensable convenience and comfort.

QUEEN-EXCLUDING HONEY-BOARD.—We see no need of them when running for comb honey, but for extracted honey we are not yet ready to decide.

ONE-HALF POUND SECTIONS.—We get just as many pounds of honey stored in that size as in any other receptacle, in the same length of time.

OLD VS. NEW FOUNDATION.—We prefer the new.

RACE OF BEES.—Germans for comb honey, and Italians for extracted honey. For general purposes, for most localities, we favor the cross between the brown-German and leather-colored Italian, and we find them good-natured. (I will here say that these two races and their crosses are all we have used, and nearly all the German colonies had a little Italian blood in them.)

SWARMING.—We prefer natural swarming to increase by division, and can get as much or more surplus honey with as without any increase.

REVERSIBLE FRAMES.—We favor their use.

WIRED FRAMES.—We prefer them whether used with full sheets of foundation or the merest comb-guides.

DEPTH OF HIVE.—While we do not advise any change from the standard Langstroth frame, if such a change were made, we would favor a shallower frame.

The above is the unanimous decision of my class of 1884—who were selected from many times the number of applicants.

Dowagiac, Mich.

Indiana Farmer.

Bees in the Fall and Winter.

F. L. DOUGHERTY.

The drouth of the present fall has been severe and wide-spread, and will leave many colonies of bees in bad condition, and unless they are given assistance, the disasters of the coming winter will be equally as far-reaching in their fatality. Many colonies may be saved with very little feeding. Others may pass the winter safely by putting two or three together, giving all the stores to one.

As to what is best to feed, we believe syrup made from good coffee sugar is cheapest and best—best because it contains less impurities, cheapest because it requires less in amount and weight per colony. And though nearly all of our colonies have stores enough to carry them through, we shall equalize the stores and feed each colony one quart of syrup.

The combs contain much of what appears to be unripe honey from pomace, spoiled fruit or plant-lice, and past experience teaches us this extra food is cheapest and best. Feeding should be done inside the hives. We not unfrequently simply drop the rear end of our hives the lowest and pour the feed directly in the hive. Before frost breaks the propolis the hives are generally sufficiently tight to hold the syrup.

Indianapolis, Ind.

SELECTIONS FROM OUR LETTER BOX

The Honey Harvest in Scotland.

The honey-gathering season has now closed. All colonies which have been at the Heather-hills have now been brought home, and their stores of honey have been found very greatly to exceed any gatherings for many years past. This, coupled with a heavy return from colonies that had fed upon clover, well repays apiarists for their trouble. Independent of a heavy yield to the apiarist, a goodly store of honey is left as winter food for the bees, which are now nearly all covered up for the winter. I hope that you have been as successful as we.

JNO. D. HUTCHISON. ♀
Glasgow, Scotland.

Croton.

I send you a specimen of a plant which we call wild sage. Will you please inform us whether we are correct or not? for many of the readers of the BEE JOURNAL are anxious about this plant. Do you think that it produces any honey? Bees have not often seen on it. Bees have done very poorly in this section, this season.

E. S. TAYLOR. ♀
Houston, Tex., Oct. 14, 1884.

[This is *Croton capitatum*, and in common with several others usually called simply *croton*. It cannot be recommended as a honey plant. The plants of the whole family are more or less poisonous, though the nectar may be entirely free from the acrid qualities of the sap. Still the amount of honey produced is small and not likely to be of much value at the best. Croton oil, well known for its severe effects upon the human skin, comes from an allied species.—T. J. BURRILL.]

Good Yield and Large Increase.

From 12 colonies, spring count, I have secured 300 pounds of comb and 325 pounds of extracted honey. The largest yield was 116 pounds from a colony of hybrids. I now have 28 colonies. WALTER WOODRUFF. ♀
Rockdale, Iowa, Oct. 20, 1884.

Report from the Sweet Home Apiary.

My yield, this year, is from 35 colonies, spring count, and is 3,392 pounds of comb honey in one and two-pound sections, and 600 pounds of extracted honey. My largest yield from one colony was 153 one-pound sections of honey. I sold \$70 worth of bees at \$5 per colony, and have remaining 56 colonies, all prepared for winter on Oct. 1, with 30 pounds of good ripe honey per colony. JOHN REY. ♀
East Saginaw, Mich., Oct. 20, 1884.

A Wonderful Yield of Honey.

This has been a busy season for me. I obtained a fraction over 172,000 pounds of honey from 550 colonies, spring count, and increased my apiary to 1,250 colonies. I have just sold my honey at 4 cents per pound. This county (Ventura) has a population of about 7,500. The honey production for the season has been about 9,000 tons. I had 57 swarms, this year, and saved all of them except one.

S. M. W. EASLEY. ♀
Springville, Calif., Oct. 10, 1884.

A Poor Season.

I began the season with 140 colonies in fair condition, and increased them to 156 in good condition for winter. I have taken, in all, 3,125 pounds of comb honey, and 225 pounds of extracted—an average of about 24 pounds per colony, spring count. The season here was a poor one. My bees were in good order for the honey harvest, but it did not come.

J. V. CALDWELL. ♀
Cambridge, Ill., Oct. 15, 1884.

My Report for the Season.

I think as Mr. Doolittle said, that is, that every bee-keeper in the United States should send in a report, at least once a year, to one of our principal bee-papers. With hopes of seeing some of our brethren fall into line, I here give my report: In January 1884, I had the care of 80 colonies of bees; I did not get a drop of honey until July 7, and none after Aug. 10. One colony produced 500 pounds of honey, while the rest (79) produced only four barrels. How is that for 1884, eh? R. JOHNSON. ♀
Iberville Parish, La.

Convention Notices.

The Southern Illinois Bee-Keepers' Association will meet at Duquoin, in the Opera House on Thursday, Nov. 13, 1884. All are cordially invited. F. H. KENNEDY, Sec.
WM. LITTLE, Pres.

The Central Illinois Bee-Keepers' Association will hold its next annual meeting in Bloomington, Ill., on the second Wednesday in January, 1885, at 9 a. m.

W. B. LAWRENCE, Sec.

The bee-keepers of McDonough and adjoining counties are requested to meet at Bushnell, Ill., on Nov. 20, 1884, for the purpose of organizing a bee-keepers' association.

J. G. NORTON.

The Iowa Central Bee-Keepers' Association will hold their annual meeting in the Court House at Winterset, Iowa, on Friday, Nov. 7, 1884. All interested in bee-culture are requested to be present.

J. E. PRYOR, Sec.

A. J. ADKISON, Pres.

The Mahoning Valley Bee-Keepers will hold their fall meeting in Ravenna, O., on Nov. 14, 1884. A cordial invitation is extended to all.

E. W. TURNER, Sec.
Newton Falls, O.

Honey and Beeswax Market.

OFFICE OF THE AMERICAN BEE JOURNAL, }
Monday, 10 a. m., Oct. 27, 1884. }

The following are the latest quotations for honey and beeswax received up to this hour:

CINCINNATI.

HONEY.—Nothing stirring in the market for the last few weeks. The approach of cooler weather is expected to impart more life to the trade. Comb honey sells at 16c. in the jobbing way, and brings 14½c on arrival for choice. Offerings exceed the demand. Extracted honey has commenced to accumulate, but demand is fair for small packages for table-use, as well as for darker grades in barrels. It brings 6½c on arrival.

BEESWAX.—Is dull at 26½c on arrival.
C. F. MUTH, Freeman & Central Ave.

NEW YORK.

HONEY.—As we have already commenced receiving consignments of this year's crop of honey, we feel safe in making the following quotations: Fancy white comb, 1-lb., 18½c; 2-lb., 16½c; fair to good, 1 and 2-lb., 14½c; fancy buckwheat, 1-lb., 12½c; 2-lb., 11½c; ordinary grades of dark, 1 and 2-lb., 11½c. Extracted white choice, in kegs or small barrels, 8½c; buckwheat, 6½c.

BEESWAX.—Prime yellow, 30½c.
MCCAUL & HILDRETH, 34 Hudson St.

BOSTON.

HONEY.—We quote best white in 1-lb. sections, 18½c; 2-lb., 16½c. Extracted, 8½c. Unglassed sections sell best.

BEESWAX.—35c.
BLAKE & RIPLEY, 57 Chatham Street.

CHICAGO.

HONEY.—Comb honey has been taken with freedom by the trade this week, but 15½c. is the best price obtainable for a fancy article of comb honey in frames. Some lots bring from 14 to 15c. when in good order. Stock of comb honey is not large at present. Extracted, 7½c. for new.

BEESWAX.—For fair to yellow, 28½c.
R. A. BURNETT, 161 South Water St.

SAN FRANCISCO.

HONEY.—Stocks are large and the demand slow. Qualities other than choice are particularly difficult to move. White to extra white comb, 9½c; dark to good, 6½c; extracted, choice to extra white, 4½c; dark and candied, 4 cents.

BEESWAX.—Wholesale, 24½c.
STEARNS & SMITH, 423 Front Street.

ST. LOUIS.

HONEY.—Steady; demand and supply both small. Comb, 12½c per lb., and strained and extracted 6½c.

BEESWAX.—Firm at 32½c for choice.
W. T. ANDERSON & CO., 104 N. 3d Street.

CLEVELAND.

HONEY.—Our market is at present overstocked with honey, large quantities having been brought in wagons, and every place is filled up. Some lots have sold as low as 9c. for 1-lb. sections of white comb. We have not changed prices, but find sales very slow at 16c. for best white 1-lb., and 14c. for 2-lb. Dark honey we are offering as low as 10 to 12c. without being able to effect sales. Extracted is not wanted at all, and no sale at any price.

BEESWAX.—28½c.
A. C. KENDEL, 115 Ontario Street.

SAN FRANCISCO.

HONEY.—We quote comb honey in 2 lb. sections, 13½c; extracted, 6½c.

GEO. W. MEADE & CO., 213 Market.

KANSAS CITY.

HONEY.—The receipts of honey are very large and fine, with a splendid demand, and we are very low in stock of all kinds of comb honey. While the tendency of everything is to lower prices, honey is in active demand, with us, at steady prices. One-half lb. sections, none in the market; one-pound, 16 cents; two-pounds, 14½c; California 2-lb., 14½c. Choice California extracted is selling at 7½c per lb.

BEESWAX.—None in the market.
CLEMONS, CLOON & CO.
Successors to Jerome Twichell.

Local Convention Directory.

1884. Time and place of Meeting.

- Oct. 31.—Northeast Mo., at Hunnewell, Mo.
A. Noland, Sec.
- Nov. 7.—Iowa Central, at Winterset, Iowa.
J. E. Pryor, Sec.
- Nov. 10.—Will County, Ill., at Beecher, Ill.
Gustavus Kettering, Sec.
- Nov. 13.—Southern Illinois, at Duquoin, Ills.
F. H. Kennedy, Sec.
- Nov. 14.—Mahoning Valley, O., at Ravenna, O.
E. W. Turner, Sec.
- Nov. 25.—Western Michigan, at Fremont, Mich.
Geo. E. Hilton, Sec.
- Dec. 3.—Southeastern Mich., at Adrian, Mich.
A. M. Gander, Sec.
- Dec. 10, 11.—Michigan State, at Lansing.
H. D. Cutting, Sec. Clinton, Mich.
- Dec. 12.—Northeastern Kansas, at Hiawatha, Kan.
1885.
- Jan. 14.—Central Illinois, at Bloomington, Ills.
W. B. Lawrence, Sec.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

What and How.

ANSWERS BY

James Heddon, Dowagiac, Mich.

Rules for this Department.

1. Give your name and post-office address.
2. Be brief, and to the point.
3. Send no simple questions, such as are answered in the bee-books.
4. Ask only such questions as are of general interest.
5. This department is not intended for advertising any one's wares—therefore questions concerning the manufacture of goods for sale are not appropriate.
6. Direct all questions to the editor—

THOS. G. NEWMAN,

925 West Madison St., CHICAGO, ILL.

Is it Foul Brood?

I send you two samples of comb which I took from a colony of bees in my apiary. I found the same in 4 colonies which were in different parts of the yard with good, strong colonies between them. Will Mr. Heddon please answer, through the BEE JOURNAL, the following questions concerning it:

1. Is it foul brood?
2. If so, will it injure my apiary after giving the bees new hives and new combs from healthy colonies?
3. If it is not foul brood, what is it, and what had I better do with it?
4. Is the white substance in the one piece dry pollen? and will it do any harm in my extracting combs?
5. Do you recommend ground cork for cushions to absorb the moisture of bees in winter?

CHAS. W. VANDERVOORT.

Napanee, Ont., Oct. 17, 1884.

ANSWERS.—1. The two pieces of comb I have examined, and one contains some cells of bee-bread moldy on top; the other, dead, dried-up

brood. While I have never had a case of foul brood to look at, I do not hesitate in saying that there is no foul brood about either comb.

2. The method you speak of for saving the bees, would not be safe if it were foul brood.

3. I do not know what caused the moldy bee-bread or dead brood, because I know nothing of the condition of your colonies.

4. The bees will take care of your trouble, and clean up the combs if the colony is strong in numbers.

5. Cork is not an absorbent.

Moving Bees.

I have 7 colonies of bees in good condition in sawdust hives, and all nicely packed for the winter. I expect to move two blocks from my present residence on Nov. 15; would you advise me to move the bees 2 or 3 miles away at once, and return them in the spring to my new residence? or do you think that I can safely take them direct to the new location, two blocks distant, after they have been confined, say 3 or 4 weeks?

F. A. GEMMILL.

Orangeville, Ont.

ANSWER.—I should feel safe in moving them very quietly as soon as they are closed in by winter to stay until spring. When they first fly, lean a board up partially in front of the entrance, and all will mark their new location. Remove from the old location as many old marks as possible.

Selling Glass as Honey.

Will Mr. Heddon please answer the following questions:

1. In glassed sections, does the glass sell as honey? that is, should it be weighed as "net?"
2. If so, would it pay for itself with honey at 15 cents per pound and glass \$3 per 50 square feet?
3. What is the outside measure of the half-pound sections?
4. Do bees ever cap cells containing pollen covered with honey?

C. A. KNOWLTON. ©

Hope Villa, La.

ANSWERS.—1. With glassed sections the glass is always sold and weighed as so much honey.

2. Yes.
3. Ours are 4¼x2 13-16 with 7 to the foot, with separators, and 8 to the foot without separators.
4. Certainly.

Our rates for two or more copies of the book, "Bees and Honey," may be found on the Book List on the second page of this paper. Also wholesale rates on all books where they are purchased "to sell again." The time for reading up will soon be here, and in anticipation of this, we now have a very large stock of books on hand, and can fill orders for them in any quantity, on receipt of orders.

Create a Local Honey Market.

Now is the time to create Honey Markets in every village, town and city. Wide-awake honey producers should get the Leaflets "Why eat Honey" (only 50 cents per 100), or else the pamphlets on "Honey as Food and Medicine," and scatter them plentifully all over the territory they can supply with honey, and the result will be a demand that will readily take all of their crops at remunerative prices. The prices for "Honey as Food and Medicine" are as follows:

Single copy 5 cts.; per doz., 40 cts.; per hundred, \$2.50. 500 will be sent postpaid for \$10.00; or 1000 for \$15.00. On orders of 100 or more, we will print, if desired, on the cover-page, "Presented by," etc., (giving the name and address of the bee-keeper who scatters them). This alone will pay him for all his trouble and expense—enabling him to dispose of his honey at home, at a good profit.

Apiary Register—New Edition.

All who intend to be systematic in their work in the apiary, should get a copy and commence to use it. The prices will hereafter be as follows:

For 50 colonies (120 pages).....\$1 00
" 100 colonies (220 pages)..... 1 25
" 200 colonies (420 pages)..... 1 50

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable ones.

TRIAL SUBSCRIBERS.—The Weekly BEE JOURNAL will be sent to any new subscriber in North America from now until the end of 1884 for 25 cents. This offer is intended to aid those who are getting up clubs at Fairs, Conventions, etc., and should add several thousand to our readers during the next month.

For \$2.75 we will supply the Weekly BEE JOURNAL one year, and Dzierzon's Rational Bee-Keeping, in paper covers; or the Monthly BEE JOURNAL and the book for \$1.75. Or, bound in cloth, with Weekly, \$3.00; with the Monthly, \$2.40.

To Canadian subscribers let us say that we have made arrangements so that we can supply the *Farmer's Advocate* of London, Ont., and the Monthly BEE JOURNAL for one year at \$1.25 for the two. This is a rare chance to obtain two good papers for about the price of one.

The Bee Journal for 1885.**Premiums, \$25.00 in Cash.**

To increase the number of readers of the BEE JOURNAL, we believe, will aid progressive bee-culture and help to elevate the pursuit. We, therefore, offer the following

CASH PREMIUMS FOR CLUBS.

\$10.00 for the largest club received at this office before Feb. 1, 1885 (either of the Weekly, Monthly, or both); one Weekly counts same as 4 Monthlies.

\$5.00 for the second largest; **\$4.00** for the third; **\$3.00** for the fourth; **\$2.00** for the fifth; and **\$1.00** for the sixth largest club.

All former offers of Premiums are now withdrawn.

The price of the Weekly BEE JOURNAL for 1885 is \$2.00 for one copy; \$3.80 for two copies (to the same or different post-offices); \$5.50 for three copies; \$7.20 for four copies; and for five or more copies, \$1.75 each.

We have decided to publish the Monthly BEE JOURNAL for next year of the same size and shape as the Weekly, (which contains about the same amount of reading matter as the present Monthly,) at 50 cents a year; two copies (to the same or different post-offices) for 90 cents; three copies for \$1.30; four copies for \$1.70; five copies for \$2.00; more than five copies for 40 cents each. The time has been extended on all portions of next year, which have been paid for at the rate of \$1.00.

Subscriptions for two or more years for one person, will count the same as each year for a different person.

New Subscribers for the Monthly for 1885 will have all the numbers for 1884 free that are published after the subscriptions are received at this office.

CLUBBING LIST.

We will supply the American Bee Journal one year, and any of the following Books, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both. Club
The Weekly Bee Journal.....	\$2 00..
and Cook's Manual, latest edition	3 25.. 3 00
Bees and Honey (T.G. Newman) cloth	3 00.. 2 75
Bees and Honey (paper covers).....	2 75.. 2 50
Binder for Weekly Bee Journal.....	2 75.. 2 50
Aplary Register for 200 colonies	3 50.. 3 25
Dzierzon's New Bee Book (cloth)....	4 00.. 3 00
Dzierzon's New Book (paper covers) 3 50..	2 75
Quinby's New Bee-Keeping.	3 50.. 3 25
Langstroth's Standard Work.....	4 00.. 3 75
Root's A B C of Bee Culture (cloth) 3 25..	3 10
Alley's Queen Rearing.....	3 00.. 2 75
Scribner's Lumber and Log Book....	2 35.. 2 25
Fisher's Grain Tables.....	2 40.. 2 25
Moore's Universal Assistant.....	4 50.. 4 25
Honey as Food & Medicine, 100 Copies	4 50.. 4 25
Blessed Bees.....	2 75.. 2 50
King's Bee-Keepers' Text Book	3 00.. 2 75

The Weekly Bee Journal one year

and Gleanings in Bee-Culture (A.I. Root)	3 00.. 2 75
Bee-Keepers' Magazine (A.J. King).....	3 00.. 2 75
Bee-Keepers' Guide (A.G. Hill).....	2 50.. 2 36
Kansas Bee-Keeper.....	3 00.. 2 75
The Apiculturist, (Silas M. Locke) ..	3 00.. 2 75
British Bee Journal.....	3 75.. 3 50
The 7 above-named papers.....	8 25.. 7 00

**THE BEST CABBAGE SEEDS**

in the world may hereafter be procured under the above Trade Mark, and we want every Cabbage Grower in the Union to test them this season so he will know what to use in future. They are called

TILLINGHAST'S PUGET SOUND BRAND**WHY ARE THEY THE BEST IN THE WORLD?**

1st. Because we have for years been perfecting the best strains, and seeding from perfect heads.
2d. Because they are grown in the extreme northern part of the Union, on Puget Sound, Washington Territory, where the soil and climate are more perfectly adapted to the complete development of Cabbage than any other section of the Union. Not only do Northern Grown Cabbage Seeds do better naturally than those grown farther South, but the more perfect development of the heads the from which the seeds are grown enables us to more critically select the true types which may thus be reproduced. The seeds also are much larger and more perfectly developed and produce larger and thrifter plants which better withstand insect ravages than any other seeds in existence.
3d. Because they are grown directly under the careful and personal supervision of a brother of the advertiser, who has our reputation at stake, and will see that they are kept the best in the world.

PRICES, &c. We now supply Early Jersey Wakefield, Early Bleichfield, Berkshire Beauty, Henderson's Early Summer, Fottler's Improved Brunswick, Premium Flat Dutch, Excelsior Flat Dutch, Le American Drumhead, Marblehead Mammoth and Red Dutch, all of this justly famous **P. S. brand**, 5 cts per pkt., 25 cts per oz., \$4.00 per lb., by mail postpaid. (Eastern stock much lower.)

AN AGENT WANTED. We want one good reliable agent (only one in every town where we have none, over 500 already established,) to sell our superior seeds, and plants grown from them, to his neighbors. Full instructions for successfully growing and selling plants will be furnished with such favorable rates on seeds that you can make money rapidly. If rightly situated to act apply at once for full particulars. Depend upon it, this is a rare chance to establish yourself in a remunerative business at your own home. For reference send for list of agents. Some sold 500,000 plants.

CAUTION! The great popularity already attained by "Tillinghast's Puget Sound Seeds" has induced some dealers to offer inferior seeds as nearly under our name as they dare to. Some of the we know have been grown on Puget Sound, but from common mixed stocks by very careless and irresponsible parties, who expect to sell on the strength of the justly earned reputation of our famous brand. To avoid all such see that they are sold under our Registered Trade Mark, or send directly to us for the

Address,— **ISAAC F. TILLINGHAST, LA PLUME, Lack'a Co., Pa.**

SEND FOR IT.

We have just issued a new four-page circular that will interest any bee-keeper. Send your name on a postal card for it.
 44Atf HENRY ALLEY, Wenham, Mass.



We will send you a watch or a chain BY MAIL ON EXPRESS, C. O. D., to be examined before paying any money and if not satisfactory, returned at our expense. We manufacture all our watches and save you 30 per cent. Catalogue of 250 styles free. Every Watch Warranted. Address **STANDARD AMERICAN WATCH CO., PITTSBURGH, PA.**

YOU NEED the National Real Estate Index. Full of TRADES, Bargains and Real Estate news. 50 cts. a year. Sample copy free. Address, 2706t **W. L. GRIGGS, Kirksville, Mo.**

NOW IS THE TIME.

I have less than 60 copies of the Bee-Keepers' Handy-Book. No more will be printed until the type is reset. One of our improved Drone and Queen-Traps and the book bound in cloth will be sent by mail for \$1.50
 44A2t HENRY ALLEY, Wenham, Mass.